ABSTRACT OF THE DISCLOSURE

A method is disclosed for operating a synchronous space division multiple access, code division multiple access communications system. The method operates, within a coverage area of a base station (BS) or radio base unit (RBU) having a multi-element antenna array, to assign spreading codes to users. The method estimates a spatial signature vector (SSV) for a current subscriber station; uses the estimated SSV as a weight vector when determining the output power that is correlated with each of a plurality of spreading code sequences and assigns a spreading code to the current subscriber station that is determined to have the minimum output power. The step of determining the output power includes steering a beamformer toward the current subscriber station by setting the weight vector equal to the SSV, and also determines the average squared value of the antenna array output that has been despread using a code i. The multi-element antenna array has M elements, and the step of determining the output power operates an M-branch receiver to despread a signal received on each element with a spreading code i, to accumulate the despread signal over a symbol duration, to scale the accumulated signal by the weight vector, to sum all of the scaled values and to square the result, and to average the squared result over R samples to determine the output power for code i for the current subscriber station. R may have a value in the range of about 16 symbols to about 64 symbols, and may be fixed or variable.